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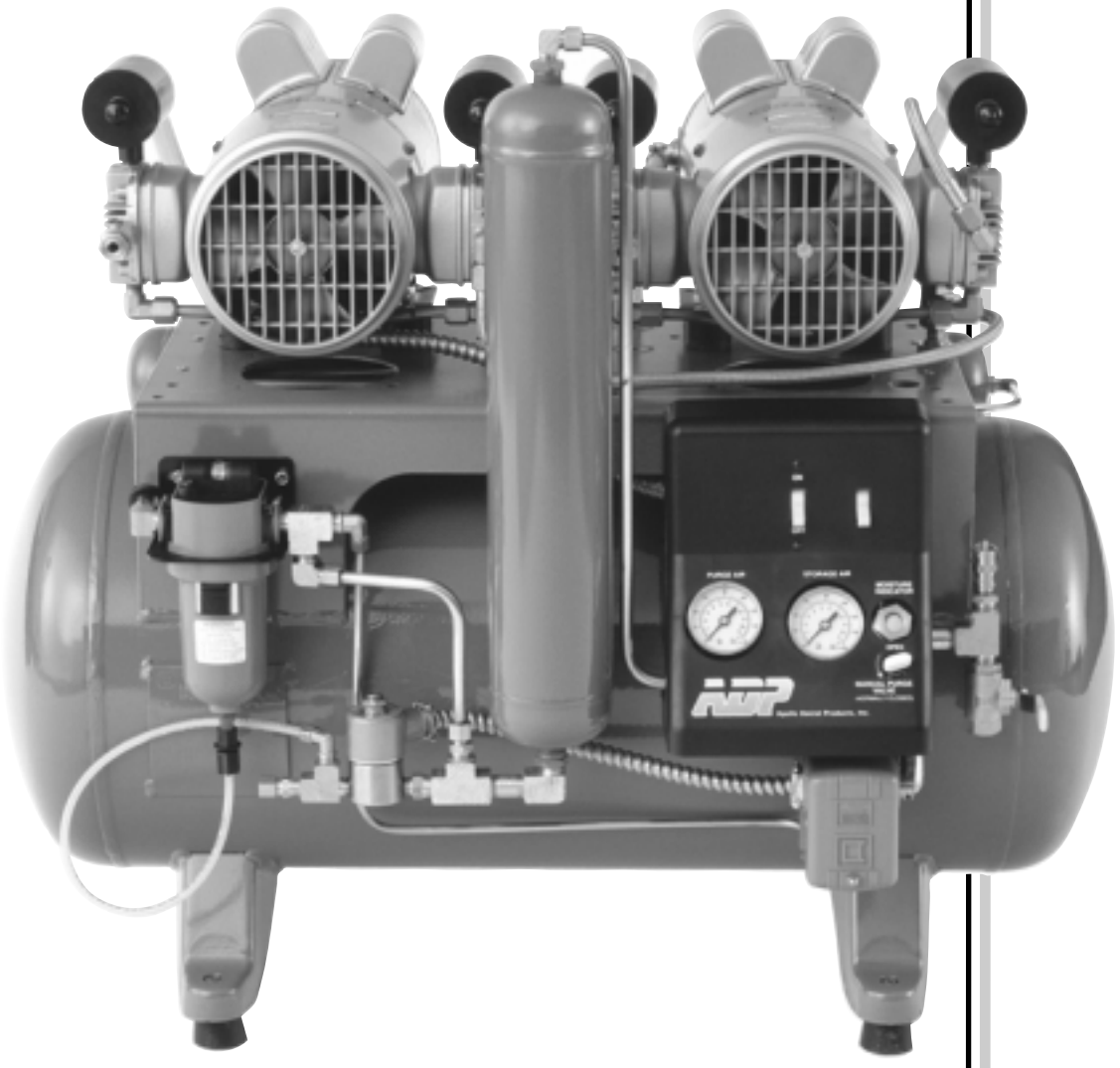
Apollo Dental Products by MIDMARK®

TROUBLE-SHOOTING GUIDE
OIL-LESS COMPRESSOR



APOLLO DENTAL PRODUCTS, INC.

Introduction

The Oil-Less Compressor Trouble-Shooting Guide from Apollo Dental Products is designed to reduce the amount of time it takes to identify problems with any ADP Oil-Less Compressor. The guide also contains exploded parts lists that make it easier to correctly identify a defective component and its related part number. If a problem is not easily determined, please feel free to contact the ADP Technical Support Division. When calling for assistance, please have the model number and serial number available.

Call Technical Support
Monday - Friday
7:00 a.m. - 5:00 p.m. (Pacific Time)

Apollo Dental Products, Inc.
245 W. Dakota Ave. • Clovis, California 93612
Telephone: (559) 292-1444
US WATS: (800) 233-4151
Fax: (559) 292-1555
E-Mail: support@apollodental.com
Website: www.apollodental.com

Reorder: AMM45005

Revised 2/02

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Customer Service/Technicl Support

Department hours are from 7:00 AM through 5:00 PM PST. ADP Customer Service/Technical Support is available for order entry and technical support by phone (800) 233-4151 or (559) 292-1444 or FAX (559) 292-1555, Monday through Friday. Fridays we are open until 4:00 PM PST and we are closed on major holidays.

Underwriter's Laboratory (UL) (cUL)	**File Number MH13627**
U.S. Food and Drug Administration (FDA)	**File Number 2937927**
City of Los Angeles Mechanical Test Labs	**File Number M880066**

Order Processing

All orders for ADP equipment and accessories must be placed through an authorized ADP dealer and processed by Apollo Dental Products, 245 West Dakota Avenue, Clovis, CA 93612, U.S.A.

- All equipment and accessories will be shipped C.O.D. unless your business has been issued a line of credit with ADP.
- Credit terms require invoices to be paid within 30 days of the invoice date. A 1.5% per month service charge applies on all unpaid balances in excess of 45 days.
- Orders are confirmed via FAX from ADP. You must provide a Telefax number.
- There will be a $25.00 service charge on all returned checks.
- There is a 15% restocking charge on all non-defective returns.

Please include the following information with your order:

- Purchase Order Number
- Model Number
- Requested Ship Date
- Side Mark Information
- Name of Person Placing Order
- Method of Shipment and Address

Shipping / Damage

- All shipments are F.O.B. Clovis, California or from one of the ADP distribution sites.
- Products are shipped via UPS. All products that exceed the UPS maximum size (150 lbs. or 103" length or 130" length/girth combined) will be shipped via common carrier. C.O.D. charges will be added to all C.O.D. shipments.
- At your request, we will ship via any air express carrier, at your expense.
- UPS DAMAGE: Accept shipment and file claim with UPS.
- TRUCK/AIR DAMAGE: Accept and note all damages clearly on the bill of lading. ADP is not responsible for concealed damage. The dealer is responsible for filing damage claim with the carrier. No credit will be issued on freight damaged replacement parts.

Product Return

Dealers may return authorized non-defective products within 90 days of the invoice date under the following conditions:

- There is a 15% restocking charge on all non-defective returns.
- All returned products must be in condition to resell. (unopened, undamaged, complete and in the original packaging)
- Your account must be current with no past due balances.
- Returns will be credited at the lower of the invoice price or current dealer price. Credit memos for use against future purchases will be issued for authorized returns.
- Only products currently offered by ADP will be accepted.
- To expedite the return procedure:
  You must obtain a Return Authorization Number (R.A.N.) from ADP Customer Service prior to returning the goods.

  Please provide the following information:

  - Company Name
  - Invoice Date
  - Serial Number
  - New Item Requested
  - Invoice Number
  - Product Name and Model Number
  - Reason for Return

- Display the R.A.N. on the shipping label of all boxes containing returned goods.
- Returned goods must be shipped freight prepaid in their original boxes and packing materials.

Warranty

All ADP units are thoroughly inspected and tested in accordance with rigid specifications and standards. Our products are guaranteed against any defective material and workmanship from the date of shipment; provided, that the installation, operation, and maintenance is done in accordance with ADP procedures as outlined in our Installation and Maintenance Guides. Warranty cards **must** be returned to ADP within ten days of installation to effect warranty.

ADP's obligation under the warranty is to provide parts for the repair or, at it's option, to provide the replacement product (excluding labor). All special, incidental and/or consequential damages are excluded. We will not issue credit for complete air compressors or vacuum systems without first attempting to correct the problem in the field. Written notice of breach of warranty must be given to ADP within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilizing chemicals and processes. Failure to follow instructions provided in ADP's Installation and Maintenance Guides may void the warranty.

Oil-Less Compressor Specification Table

Number Of Heads	Models	Max Number Users	CFM@80PSI	Total Horsepower	Tank Capacity (Gals)	Voltage	Total Amps	Recommended Breaker Size	Sound Level (DB-A)	Width (In.)	Depth (In.)	Height (In.)	Weight (Lbs) (Shipping)
1	OS11D,(Q)	1	2.8	3/4	7	115	16	20	77,(67)	24	21	26 1/2	173,(187)
	OS12D,(Q)	1	2.8	3/4	7	208-230	8	20	77,(67)	24	21	26 1/2	173,(187)
	OS21D,(Q)	2	3.7	1	10	115	10.4	20	78,(68)	24	21	29	193,(207)
	OS22D,(Q)	2	3.7	1	10	208-230	5.2	20	78,(68)	24	21	29	193,(207)
	OS31D,(Q)	3	5.5	1 1/2	15	115	20	30	79,(71)	33	22	29	230,(267)
	OS32D,(Q)	3	5.5	1 1/2	15	208-230	10	20	79,(71)	33	23	29	230,(267)
	OS42D,(Q)	4	7.5	2	20	208-230	10	20	80,(72)	34	22	30 1/2	249,(286)
	OS52D	5	9	3	20	208-230	16.8	30	74	35	23	33	315
2	OT32D	3	5.6	1 1/2	15	208-230	16	30	78	33	24	29	241
	OT32DQ	3	5.6	1 1/2	15	208-230	16	30	70	33	25	29	295
	OT42D	4	7.4	2	20	208-230	10.4	20	79	34	24	31	286
	OT42DQ	4	7.4	2	20	208-230	10.4	20	71	34	25	31	340
	OT62D	6	11	3	30	208-230	20	30	81	38	28	33	330
	OT62DQ	6	11	3	30	208-230	20	30	72	38	31	33	390
	OT82D	8	15	4	30	208-230	20	30	82	38	28	33	350
	OT82DQ	8	15	4	30	208-230	20	30	73	38	31	33	410

Options: For compressor mounted, Compressor Starter Contactor, add **"C"** suffix to the compressor part number. (**ie., OT42DC**)

Notes: Remote fresh air intake air temperature must not exceed compressor room air temperature by more than 20˚ Fahrenheit. **Moisture will condense in the air intake line and enter the compressor head. Resultant contamination will cause compressor failure.** Compressor must be installed in a clean, dry, well ventilated area, on a solid, level floor. Ambient temperature must be within the range of 40˚ Fahrenheit minimum (4˚ Celcius) to 100˚ Fahrenheit maximum (38˚ Celcius).
Twin Models - Both motors must be **"ON"** during normal operating conditions.
"D" denotes Desiccant Dryer equipped model.
"Q" denotes Quiet Cover model.

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Oil-Less Compressor Maintenance Kits

Whether oil-less or lubricated, the dental air compressor must consistently deliver hygienic air to the dental operatory. Many procedures such as bonding and composite restorations depend on it. Air compressor systems will perform better and air driven handpieces will last longer and suffer fewer repairs when operating with high quality air.

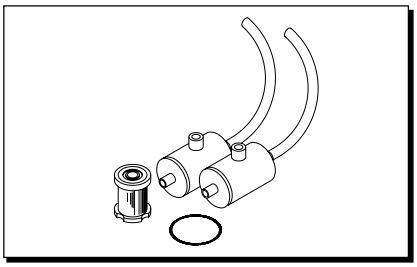
Regular service and maintenance is important in ensuring that the air compressor meets the demands for uninterupted air supply. Apollo Dental Products offers the following maintenance kits designed specifically for each of our air systems. The maintenance kits will help reduce the chance of downtime due to breakdown, while ensuring maximum performance and life expectancy of the ADP air compressor.

Annual maintenance is recommended.

Oil-less Compressor - OS1V,OS2V

Part Number: ACA85403

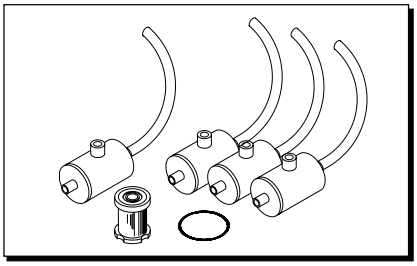
- (2) Air Intake Filter - ACP90500
- (1) Coalescing Filter Element - PFM85230
- (1) O-Ring - MRP85220



Oil-less Compressor - OS3V, OS42 OT32, OT42

Part Number: ACA85404

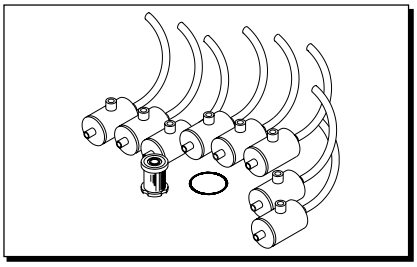
- (4) Air Intake Filter - ACP90500
- (1) Coalescing Filter Element - PFM85210
- (1) O-Ring - MRP85220



Oil-less Compressor - OT62, OT82

Part Number: ACA85406

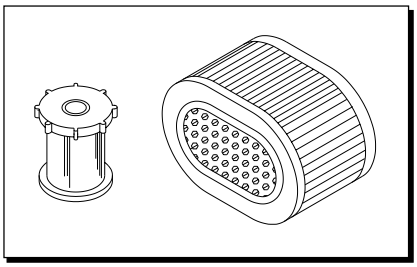
- (8) Air Intake Filter - ACP90500
- (1) Coalescing Filter Element - PFM85210
- (1) O-Ring - MRP85220



Scroll Compressor - OS52 (Annual)

Part Number: ACA85415

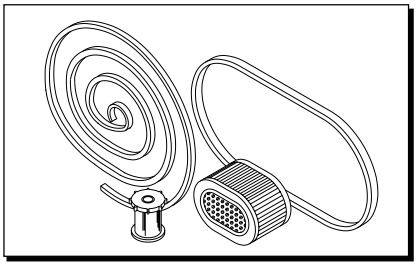
- (1) Intake Filter Element - PFM50950
- (1) Coalescing Filter Element - PFM85210



Scroll Compressor - OS52 (10,000 Hour)

Part Number: ACA85416

- (1) Tip Seal Set-Scroll - HPA30505
- (1) Belt Scroll Compressors - MMS73500
- (1) Element Intake Filter Scroll - PFM50950
- (1) Coalescing Filter Element - PFM85210



Trouble-Shooting Chart
Single Head Oil-Less Compressor

DOES COMPRESSOR RUN?

YES → Does compressor run for a few seconds, "chuggs," then stops?

YES → **Go to next page**

NO → Does unloader valve (F) pressure switch (N) or float assembly (D) seat while running?

NO → Clean or replace

YES → Is intake filter (I) clogged?

YES → Replace intake filter

NO → Is there sufficient pressure build-up with head discharge line (K) removed?

NO → Defective head, contact ADP

YES → Does compressor pressurize from 80 to 100 psi in less than 1 minute with no air being used?

NO → **NOTE:** Disconnect line from bottom of coalescing (D) bowl for proper diagnosis.

NO → Does compressor cycle with no air being used?

YES → Is manual purge valve (H) in "ON" position?

YES → Turn valve to "OFF" position

NO → Are there leaks in compressor or in office piping system?

YES → Locate and repair

NO → Does air leak from unloader valve (F) or pressure switch (N) or float assembly (D) continuously until unit cycles again?

NO → Contact ADP

YES → Check storage check valve (G), between purge & storage gauges.

NOTE: Close shut off valve (M). Pump up tank to 100 psi. If pressure is maintained for 15-20 min., leak is in office lines.

NO → Is the moisture indicator (L) pink?

YES → Does unloader valve system function properly?

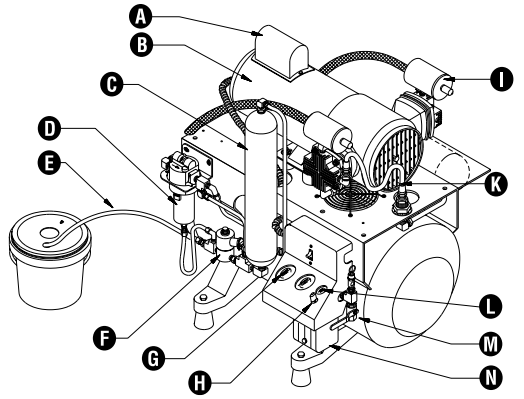
NO → **1.** Ensure that unloader valve (F), float assembly (D) & pressure switch (N) close on pump-up, & open on purge cycle. **2.** Ensure that drain line (E) is not clogged

YES → Does compressor run too hot or too frequent?

YES → **1.** Locate and repair leaks **2.** Ventilate if room is above 100 deg F. **3.** Contact ADP, compressor may be undersized.

NO → Run unit in manual purge mode for one week. If indicator still wet, replace desiccant (C).

Compressor Component Diagram



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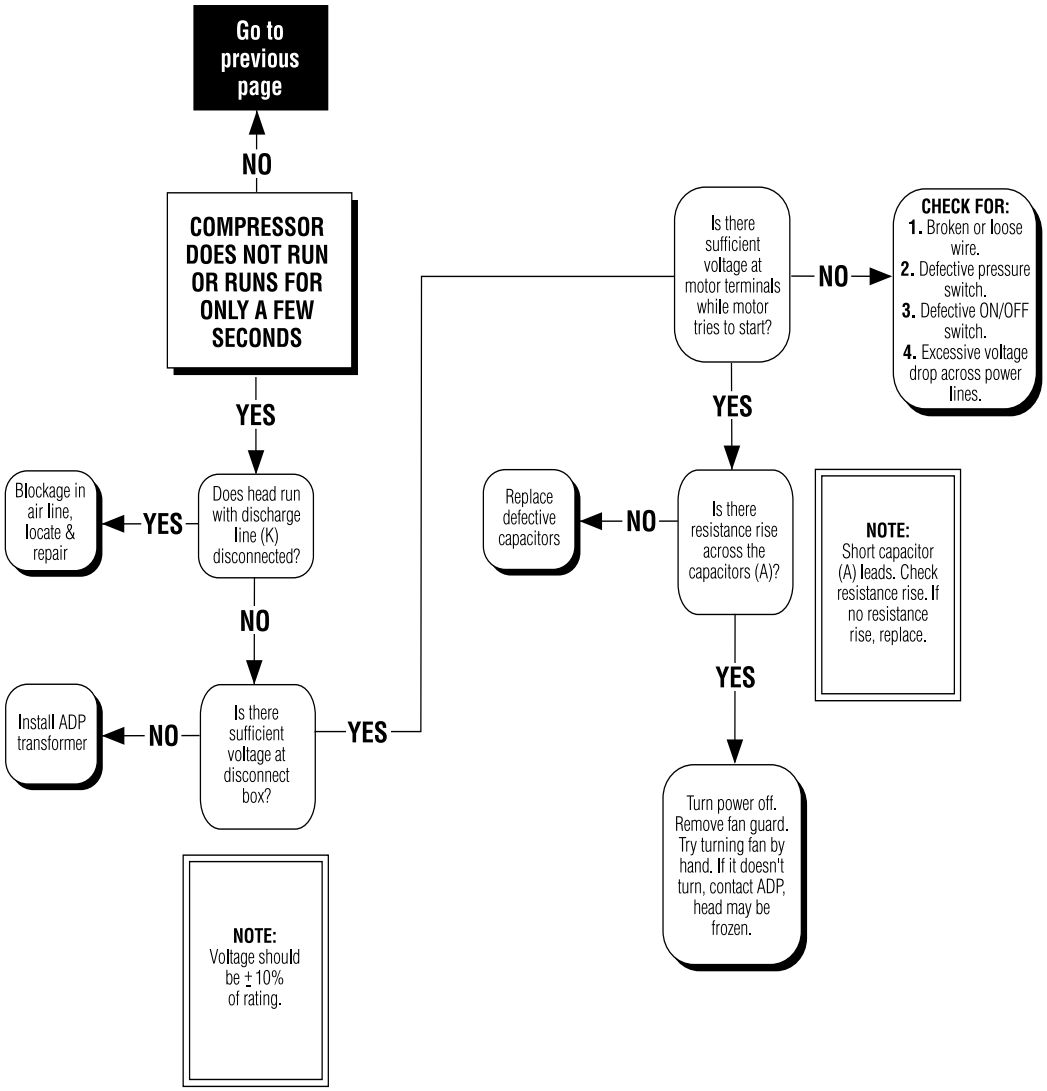
Trouble-Shooting Chart
Single Head Oil-Less Compressor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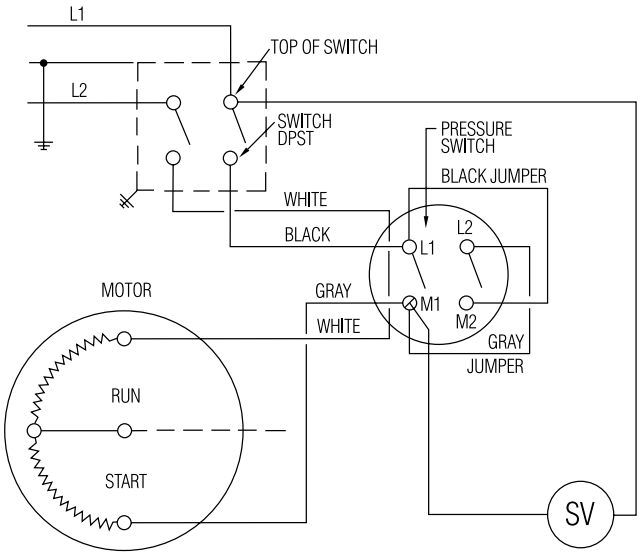
NO
COMPRESSOR DOES NOT RUN OR RUNS FOR ONLY A FEW SECONDS
YES
Does head run with discharge line (K) disconnected?
YES
Blockage in air line, locate & repair
NO
Is there sufficient voltage at disconnect box?
NO
Install ADP transformer
YES
NOTE: Voltage should be ± 10% of rating.
Is there sufficient voltage at motor terminals while motor tries to start?
NO
CHECK FOR:
1. Broken or loose wire.
2. Defective pressure switch.
3. Defective ON/OFF switch.
4. Excessive voltage drop across power lines.
YES
Is there resistance rise across the capacitors (A)?
NO
Replace defective capacitors
NOTE: Short capacitor (A) leads. Check resistance rise. If no resistance rise, replace.
YES
Turn power off. Remove fan guard. Try turning fan by hand. If it doesn't turn, contact ADP, head may be frozen.

Compressor Wiring Diagram



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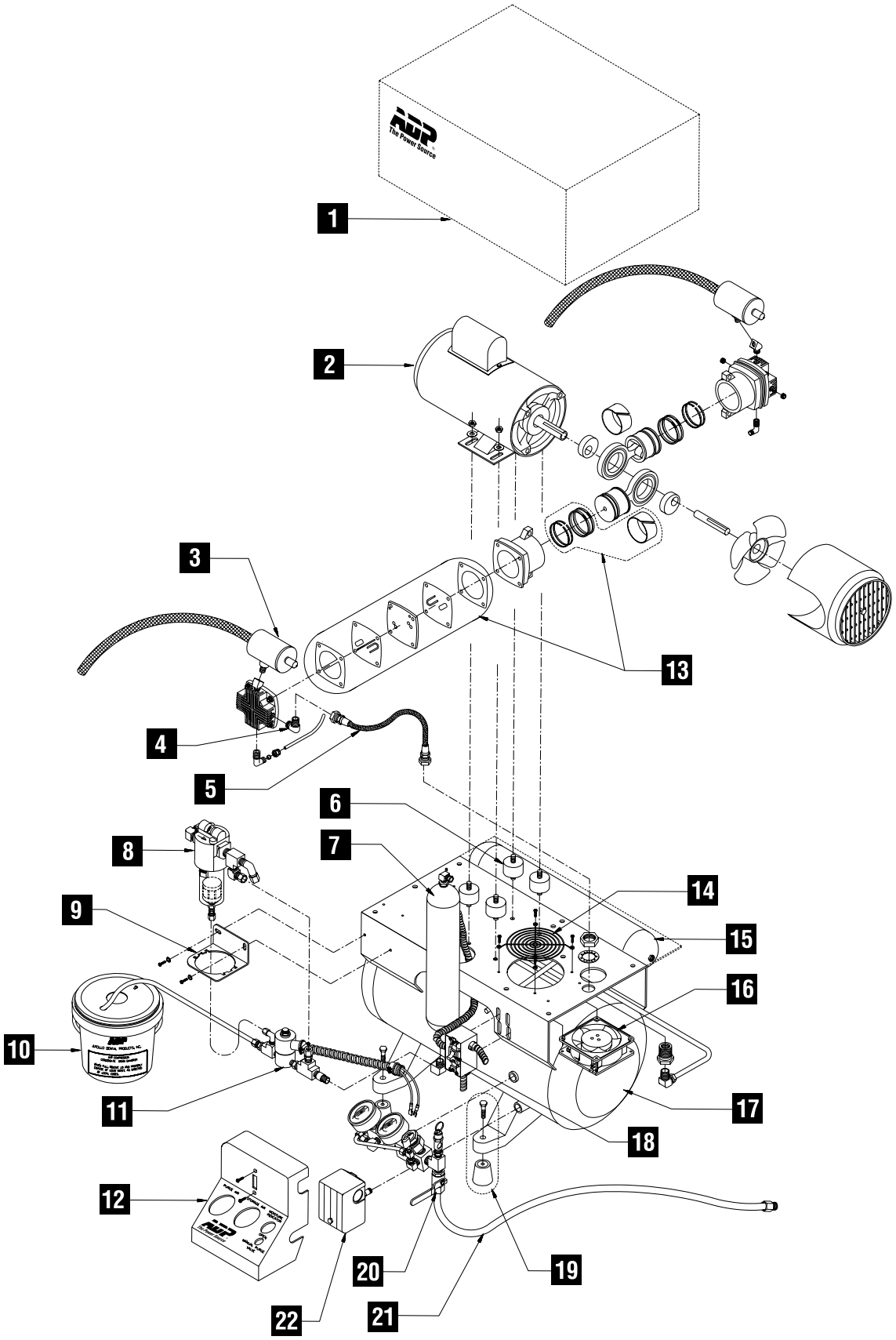
Desiccant Model
Single Head / 2 Cylinder



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Desiccant Model
Single Head / 2 Cylinder

Item	Description	Quantity	OS11D, 12D	OS21D, 22D
1	Quiet Cover (Optional)	1	ACA70700	ACA70700
2	Assembly, Compressor Head (Complete)	1	HGH30206	HGH30212
2a	Fan, Compressor (Clockwise)	1	HGA10315	HGA10320
2b	Shroud, Fan	1	HGA30305	HGA30300
3	Filter, Air Intake*	2	ACP90500	ACP90500
4	Flare Fitting	1	PCB50125	PCB50125
5	Hose, Flex 12”	1	PCH50206	PCH50206
6	Mount, Motor	4	MRP70980	MRP70980
7	Assembly, Dryer Tank (Complete)	1	ACA85309	ACA85308
7a	Kit, Desiccant	1	ACA85345	ACA85345
8	Assembly, Ultrair (Complete)	1	ACA70305	ACA70305
8a	Element, .01 micron*	1	ACA86050	ACA86050
8b	Assembly, Float	1	ACA85210	ACA85210
8c	Indicator, Differential Pressure	1	AAP85210	AAP85210
9	Bracket, Ultrair	1	MBS70107	MBS70107
10	Canister, Condensate Drain	1	SPA95400	SPA95400
11	Valve, Quick Exhaust 115V (Solenoid)	1	PVV70501	PVV70501
11	Valve, Quick Exhaust 208V (Solenoid)	1	PVV70502	PVV70502
11a	Kit, Repair Solenoid	1	ACA85332	ACA85332
11b	Coil, Solenoid Valve 115V	1	ECO10117	ECO10117
11c	Coil, Solenoid Valve 208V	1	ECO10118	ECO10118
12	Shroud, Cluster Panel	1	ACP70210	ACP70210
13	Kit, Head Repair	1	HGA85325	HGA85325
14	Guard, Fan	1	MMS70200	MMS70200
15	Tank, Purge	1	STK96001	STK96003
16	Fan, 115V	1	SEA95535	SEA95535
16	Fan, 208V	1	SEA95540	SEA95540
17	Tank, Receiver	1	TST90303	TST90307
18	Switch, ON/OFF	1	ECS10417	ECS10417
19	Feet, Rubber	4	ACA85975	ACA85975
20	Assembly, Control Cluser (Complete)	1	SPA94000	SPA94000
20a	Kit, Moisture Indicator	1	ACA85965	ACA85965
20b	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400
20c	Valve, Ball 3/8”	1	PVV50500	PVV50500
20d	Valve, Check 3/8”	1	PVV50515	PVV50515
20e	Valve, Manual Purge	1	PVV50550	PVV50550
20f	Valve, Pressure Safety 125 PSI	1	PVV50560	PVV50560
21	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
22	Switch, Pressure	1	ECS10445	ECS10445
23	Maintenance Kit	1	ACA85403	ACA85403

*** Parts Included In Maintenance Kit**

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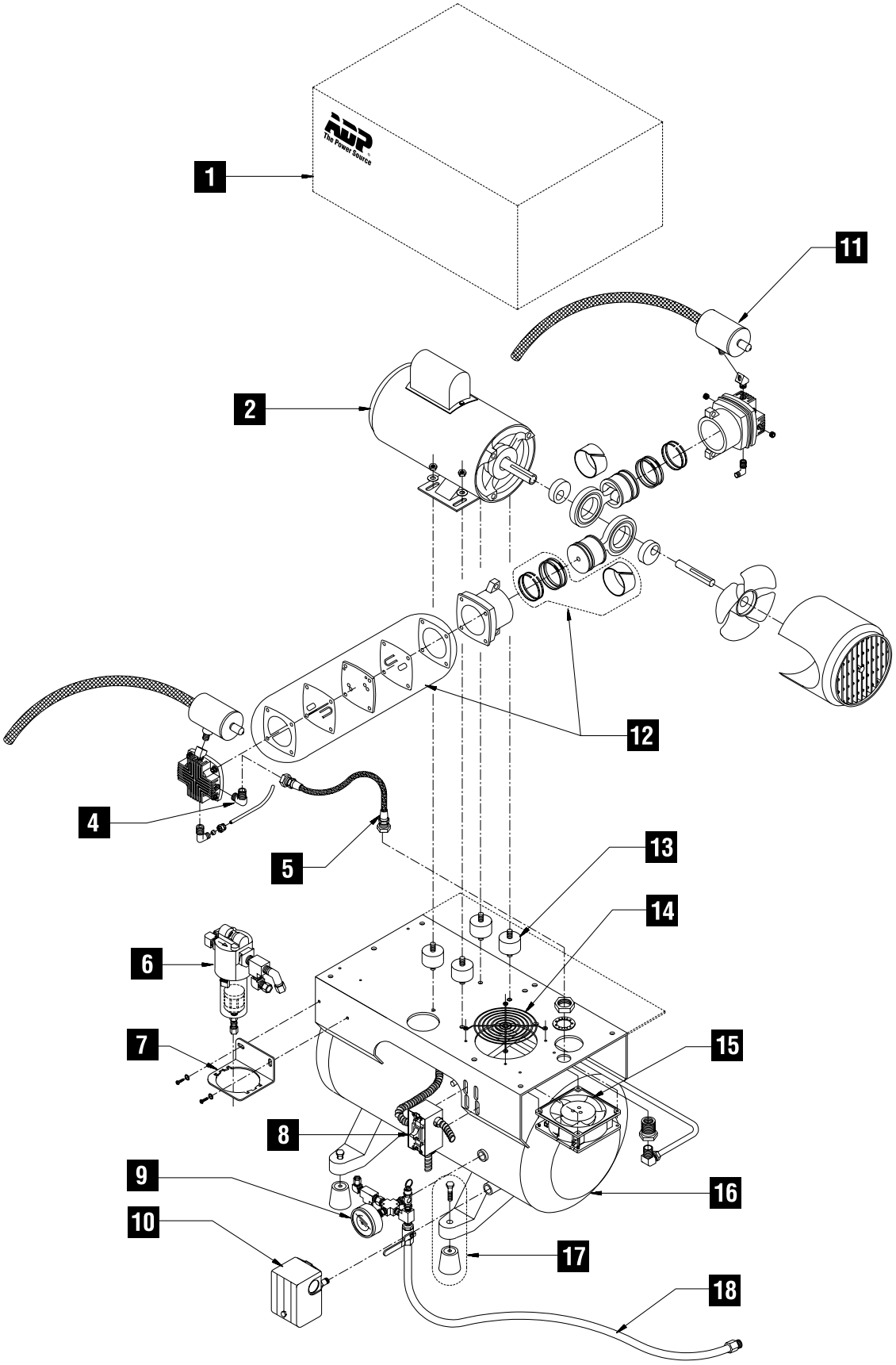
Standard Model
Single Head / 2 Cylinder



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Standard Model
Single Head / 2 Cylinder

Item	Description	Quantity	OS11	OS12	OS21	OS22
1	Quiet Cover (Optional)	1	ACA70700	ACA70700	ACA70700	ACA70700
2	Assembly, Compressor Head (Complete)	1	HGH30206	HGH30206	HGH30212	HGH30212
2a	Fan, Compressor (Clockwise)	1	HGA10315	HGA10315	HGA10320	HGA10320
2b	Shroud, Fan	1	HGA30305	HGA30305	HGA30300	HGA30300
3	Flare Fitting	1	PCB50125	PCB50125	PCB50125	PCB50125
4	Hose, Flex 12”	1	PCH50206	PCH50206	PCH50206	PCH50206
5	Assembly, Ultrair (Complete)	1	ACA70305	ACA70305	ACA70305	ACA70305
5a	Element, .01 micron*	1	ACA86050	ACA86050	ACA86050	ACA86050
5b	Assembly, Float	1	ACA85211	ACA85211	ACA85211	ACA85211
5c	Indicator, Differential Pressure	1	AAP85210	AAP85210	AAP85210	AAP85210
6	Bracket, Ultrair	1	MBS70107	MBS70107	MBS70107	MBS70107
7	Switch, ON/OFF	1	ECS10417	ECS10417	ECS10417	ECS10417
8	Assembly, Control Cluser (Complete)	1	SPA96100	SPA96100	SPA96100	SPA96100
8a	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400	PGA70400	PGA70400
8b	Valve, Ball 3/8”	1	PVV50500	PVV50500	PVV50500	PVV50500
8c	Valve, Check 3/8”	1	PVV50515	PVV50515	PVV50515	PVV50515
8d	Valve, Safety 125 PSI	1	PVV50560	PVV50560	PVV50560	PVV50560
9	Switch, Pressure	1	ECS10445	ECS10445	ECS10445	ECS10445
10	Filter, Air Intake*	2	ACP90500	ACP90500	ACP90500	ACP90500
12	Mount, Motor	4	MRP70980	MRP70980	MRP70980	MRP70980
11	Kit, Head Repair	1	HGA85325	HGA85325	HGA85325	HGA85325
13	Guard, Fan	1	MMS70200	MMS70200	MMS70200	MMS70200
14	Fan, 115V	1	SEA95535	---	SEA95535	---
14	Fan, 208V	1	---	SEA95540	---	SEA95540
15	Tank, Receiver	1	TST90303	TST90303	TST90307	TST90307
16	Feet, Rubber	4	MRP70967	MRP70967	MRP70967	MRP70967
17	Hose, 5’ x 3/8”	1	ACA85955	ACA85955	ACA85955	ACA85955
18	Maintenance Kit	1	ACA85403	ACA85403	ACA85403	ACA85403

*** Parts Included In Maintenance Kit**

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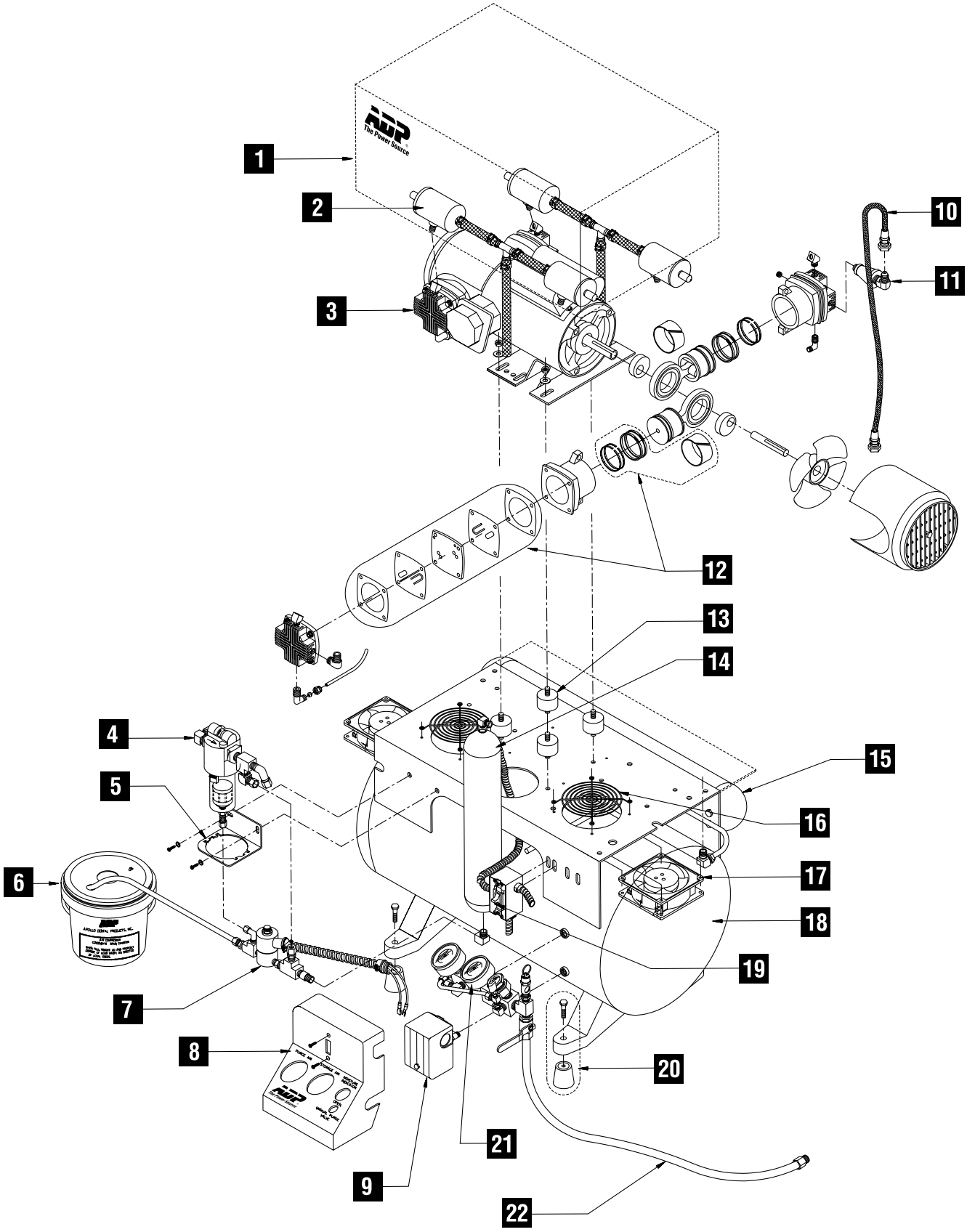
Desiccant Model
Single Head / 4 Cylinder



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Desiccant Model
Single Head / 4 Cylinder

Item	Description	Quantity	OS31D	OS32D	OS42D
1	Quiet Cover (Optional)	1	ACA70705	ACA70705	ACA70705
2	Filter, Air Intake*	4	ACP90500	ACP90500	ACP90500
3	Assembly, Compressor Head (Complete)	1	HGH30222	HGH30222	HGH30226
3a	Fan, Compressor (Counter-clockwise)	1	HGA10325	HGA10325	HGA10325
3b	Fan, Compressor (Clockwise)	1	HGA10320	HGA10320	HGA10320
3c	Shroud, Fan	1	HGA30300	HGA30300	HGA30300
4	Assembly, Ultrair (Complete)	1	ACA70215	ACA70215	ACA70215
4a	Element, .01 micron	1	ACA86055	ACA86055	ACA86055
4b	Assembly, Float	1	ACA85210	ACA85210	ACA85210
4c	Indicator, Differential Pressure	1	AAP85210	AAP85210	AAP85210
5	Bracket, Ultrair	1	MBS70110	MBS70110	MBS70110
6	Canister, Condensate Drain	1	SPA95400	SPA95400	SPA95400
7	Valve, Quick Exhaust 115V (Solenoid)	1	PVV70501	---	---
7	Valve, Quick Exhaust 208V (Solenoid)	1	---	PVV70502	PVV70502
7a	Kit, Repair Solenoid	1	ACA85332	ACA85332	ACA85332
7c	Coil, Solenoid Valve 115V	1	ECO10117	---	---
7c	Coil, Solenoid Valve 208V	1	---	ECO10118	ECO10118
8	Shroud, Cluster Panel	1	ACP70210	ACP70210	ACP70210
9	Switch, Pressure	1	ECS10445	ECS10445	ECS10445
10	Hose, Flex 12”	1	PCH50206	PCH50206	PCH50206
11	Flare Fitting	1	PCB50125	PCB50125	PCB50125
12	Kit, Head Repair	1	HGA85335	HGA85335	HGA85335
13	Mount, Motor	4	MRP70980	MRP70980	MRP70980
14	Assembly, Dryer Tank (Complete)	1	ACA85308	ACA85308	ACA85308
14a	Kit, Desiccant	1	ACA85345	ACA85345	ACA85345
15	Tank, Purge	1	STK96004	STK96004	STK96005
16	Guard, Fan	2	MMS70200	MMS70200	MMS70200
17	Fan, 115V	1	SEA95535	---	---
17	Fan, 208V	1	---	SEA95540	SEA95540
18	Tank, Receiver	1	TST90312	TST90312	TST90317
19	Switch, ON/OFF	1	ECS10417	ECS10417	ECS10417
20	Feet, Rubber	4	ACA85975	ACA85975	ACA85975
21	Assembly, Control Cluster (Complete)	1	SPA94000	SPA94000	SPA94000
21a	Kit, Moisture Indicator	1	ACA85965	ACA85965	ACA85965
21b	Gauge, Air Pressure	2	PGA70400	PGA70400	PGA70400
21c	Valve, Ball 3/8”	1	PVV50500	PVV50500	PVV50500
21d	Valve, Check 3/8”	1	PVV50515	PVV50515	PVV50515
21e	Valve, Manual Purge	1	PVV50550	PVV50550	PVV50550
21f	Valve, Safety 125 PSI	1	PVV50560	PVV50560	PVV50560
22	Hose, 5’ x 3/8”	1	ACA85955	ACA85955	ACA85955
23	Maintenance Kit	1	ACA85404	ACA85404	ACA85404

*** Parts Included In Maintenance Kit**

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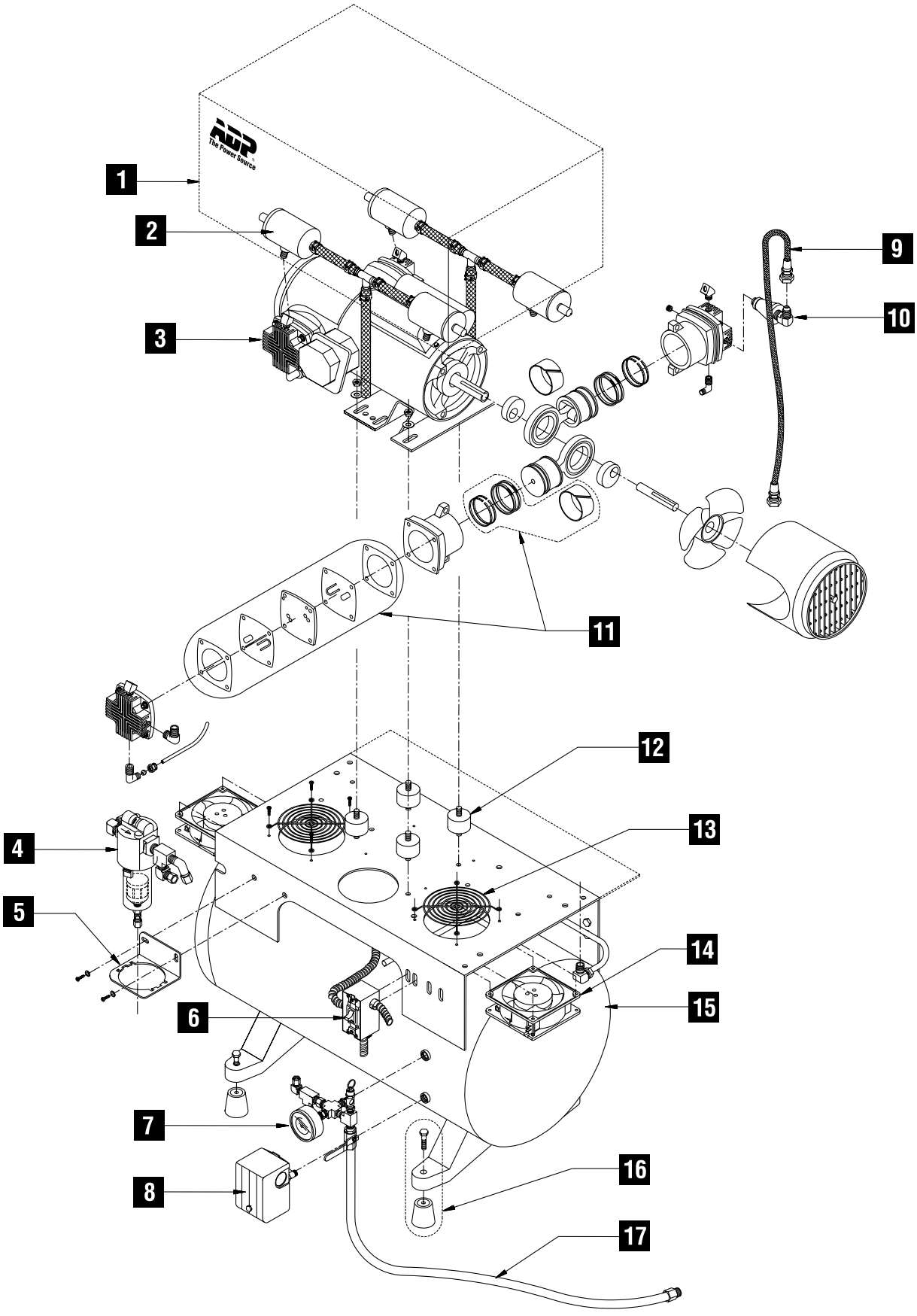
Standard Model
Single Head / 4 Cylinder



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Standard Model
Single Head / 4 Cylinder

Item	Description	Quantity	OS3V	OS42
1	Quiet Cover (Optional)	1	ACA70705	ACA70705
2	Filter, Air Intake*	4	ACP90500	ACP90500
3	Assembly, Compressor Head (Complete)	1	HGH30222	HGH30226
3a	Fan, Compressor (Counter-clockwise)	1	HGA10325	HGA10325
3b	Fan, Compressor (Clockwise)	1	HGA10320	HGA10320
3c	Shroud, Fan	1	HGA30300	HGA30300
4	Assembly, Ultrair (Complete)	1	ACA70215	ACA70215
4a	Element, .01 micron*	1	ACA86055	ACA86055
4b	Assembly, Float	1	ACA85210	ACA85210
4c	Indicator, Differential Pressure	1	AAP85210	AAP85210
5	Bracket, Ultrair	1	MBS70110	MBS70110
6	Switch, ON/OFF	1	ECS10417	ECS10417
7	Assembly, Control Cluster (Complete)	1	SPA96100	SPA96100
7a	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400
7b	Valve, Check 3/8”	1	PVV50515	PVV50515
7c	Valve, Ball 3/8”	1	PVV50500	PVV50500
7d	Valve, Pressure Relief	1	PVV50560	PVV50560
8	Switch, Pressure	1	ECS10445	ECS10445
9	Hose, Flex 12”	1	PCH50206	PCH50206
10	Flare Fitting	1	PCB50125	PCB50125
11	Kit, Head Repair	1	HGA85335	HGA85335
12	Mount, Motor	4	MRP70980	MRP70980
13	Guard, Fan	2	MMS70200	MMS70200
14	Fan, 115V	2	SEA95535	---
14	Fan, 208V	2	---	SEA95540
15	Tank, Reciever	1	TST90312	TST90317
16	Feet, Rubber	4	ACA85975	ACA85975
17	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
18	Maintenance Kit	1	ACA85404	ACA85404

*** Parts Included In Maintenance Kit**

Trouble-Shooting Chart
Twin Head Oil-Less Compressor

DOES COMPRESSOR RUN?

NO → **Go to next page**

YES → Does compressor run for a few seconds, "chuggs", then stops?

YES → Does unloader valve (F) pressure switch (I) or float assembly (D) seat while running?

NO → Clean or replace

YES → Is intake filter (A) clogged?

YES → Replace intake filter

NO → Is there sufficient pressure build-up with head discharge line (M) removed?

NO → Defective head, contact ADP

YES → Is there a blockage in the air lines?

YES → Locate and repair

NO → **NOTE:** 1. On models OT62 & OT82 inspect check valves at discharge tee (L) for obstructions.

NOTE: Disconnect line from bottom of coalescing (D) bowl for proper diagnosis.

NO → Does compressor pressurize from 80 to 100 psi in less than 1 minute with no air being used?

NO → Are there leaks in compressor or in office piping system?

YES → Locate and repair

NO → Does air leak from unloader valve (F) or pressure switch (I) or coalescent filter float (D) continuously until unit cycles again?

NO → Contact ADP

YES → Check storage check valve (G), between purge & storage gauges.

NOTE: Close shut off valve (N). Pump up tank to 100 psi. If pressure is maintained for 15-20 min., leak is in office lines.

YES → Is manual purge valve (H) in "ON" position?

YES → Turn valve to "OFF" position

YES → Does compressor cycle with no air being used?

NO → Is the moisture indicator (O) pink?

YES → Does unloader valve system function properly?

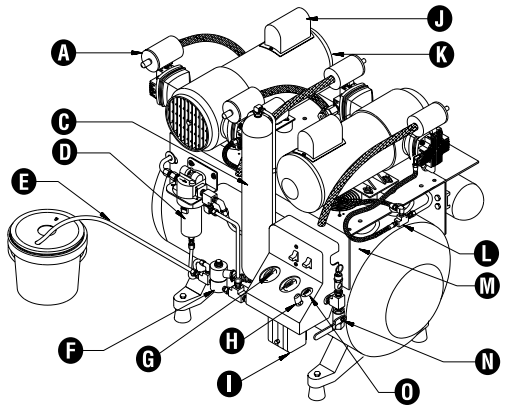
NO → **1.** Ensure that unloader valve (F), float assembly (D) & pressure switch (I) close on pump-up, & open on purge cycle. **2.** Ensure that drain line (E) is not clogged

YES → Does compressor run too hot or too frequent?

YES → **1.** Locate and repair leaks **2.** Ventilate if room is above 100 deg F. **3.** Contact ADP, compressor may be undersized.

NO → Run unit in manual purge mode for one week. If indicator still wet, replace desiccant (C).

Compressor Component Diagram



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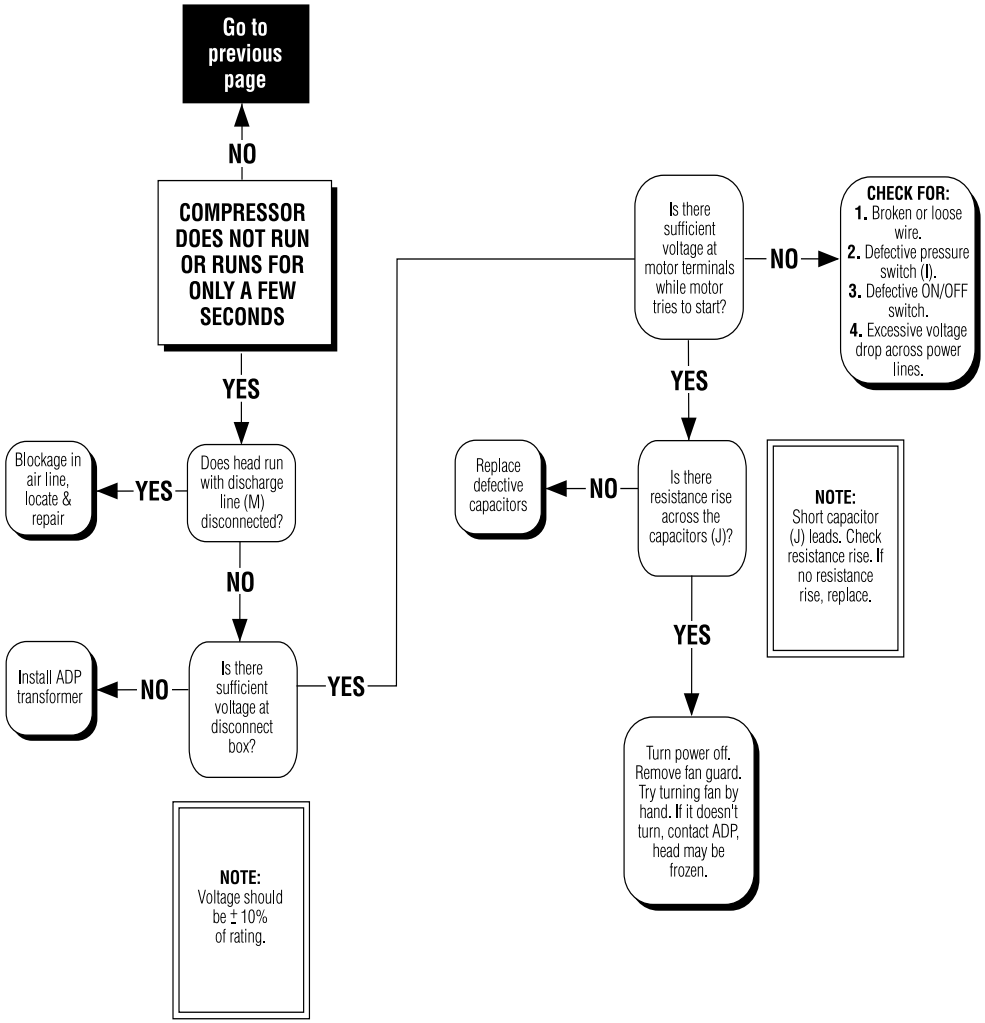
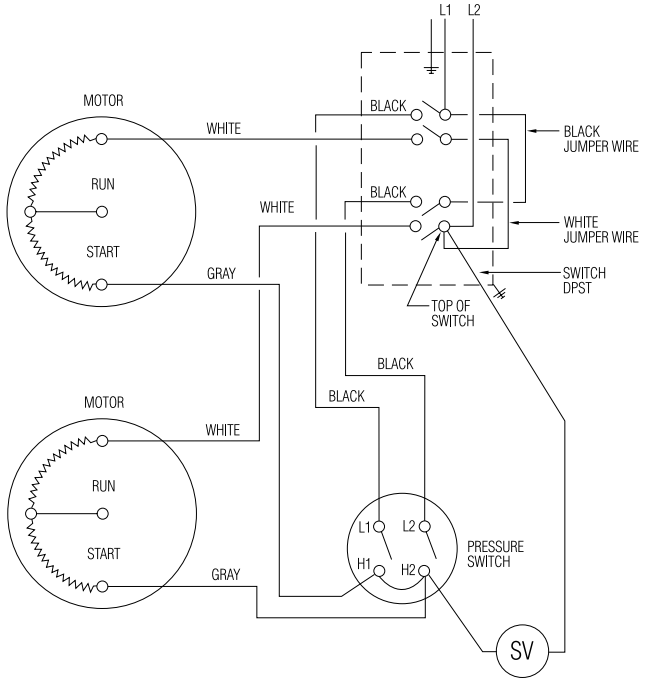
Trouble-Shooting Chart
Twin Head Oil-Less Compressor


Go to previous page
NO
COMPRESSOR DOES NOT RUN OR RUNS FOR ONLY A FEW SECONDS
YES
Does head run with discharge line (M) disconnected?
YES
Blockage in air line, locate & repair
NO
Is there sufficient voltage at disconnect box?
NO
Install ADP transformer
YES
NOTE: Voltage should be ± 10% of rating.
Is there sufficient voltage at motor terminals while motor tries to start?
NO
CHECK FOR:
1. Broken or loose wire.
2. Defective pressure switch (I).
3. Defective ON/OFF switch.
4. Excessive voltage drop across power lines.
YES
Is there resistance rise across the capacitors (J)?
NO
Replace defective capacitors
NOTE: Short capacitor (J) leads. Check resistance rise. If no resistance rise, replace.
YES
Turn power off. Remove fan guard. Try turning fan by hand. If it doesn't turn, contact ADP, head may be frozen.

Compressor Wiring Diagram



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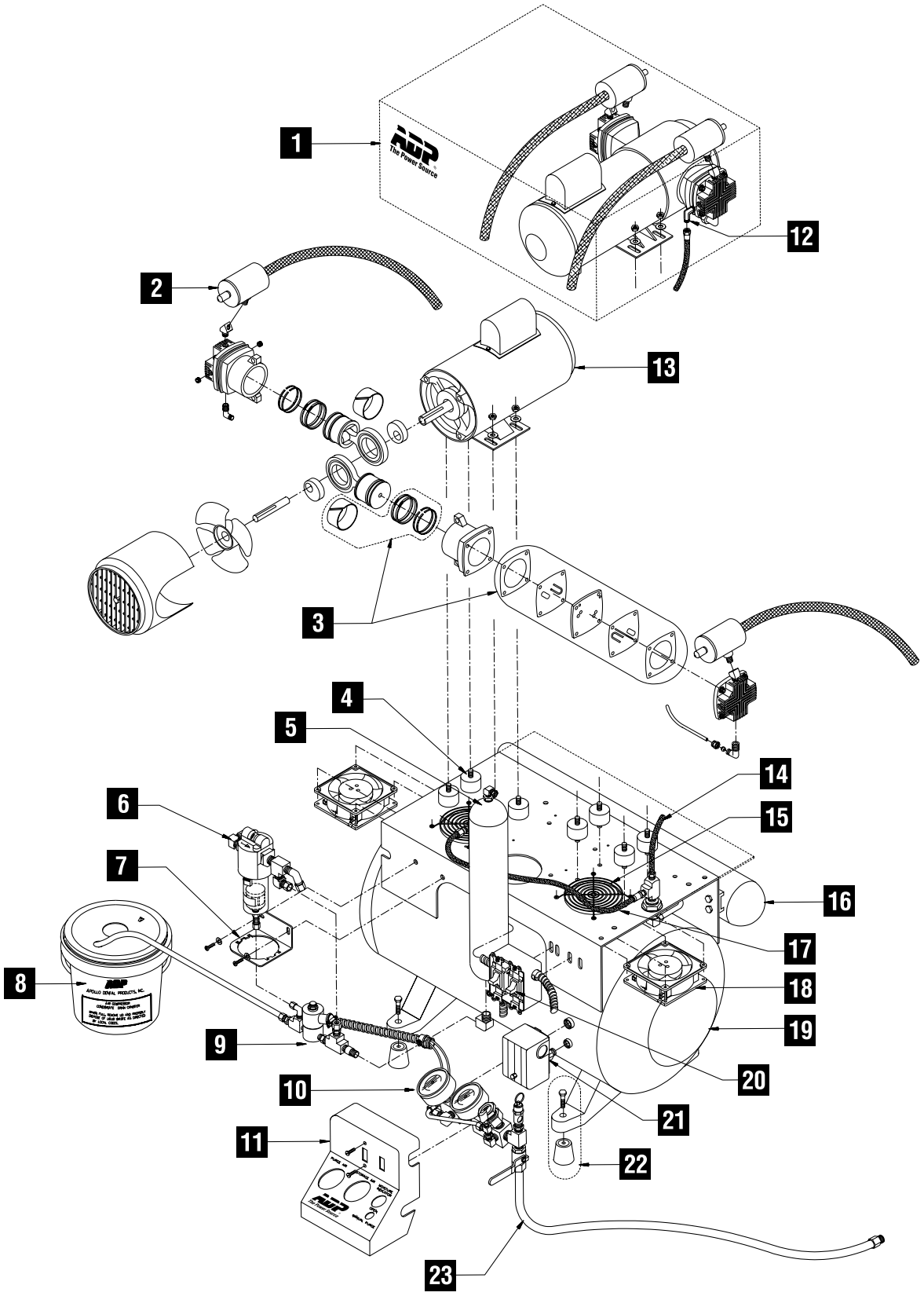
Desiccant Model
Twin Head / 2 Cylinder



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Desiccant Model
Twin Head / 2 Cylinder

Item	Description	Quantity	OT32D	OT42D
1	Quiet Cover (Optional)	1	ACA70710	ACA70710
2	Filter, Air Intake*	4	ACP90500	ACP90500
3	Kit, Head Repair	2	HGA85325	HGA85325
4	Mount, Motor	8	MRP70980	MRP70980
5	Assembly, Dryer Tank (Complete)	1	ACA85308	ACA85308
5a	Kit, Desiccant	1	ACA85345	ACA85345
6	Assembly, Ultrair (Complete)	1	ACA85215	ACA85215
6a	Element, .01 micron*	1	ACA86055	ACA86055
6b	Assembly, Float	1	ACA85210	ACA85210
6c	Indicator, Differential Pressure	1	AAP85210	AAP85210
7	Bracket, Ultrair	1	MBS70110	MBS70110
8	Canister, Condensate Drain	1	SPA95400	SPA95400
9	Valve, Quick Exhaust 208V (Solenoid)	1	PVV70502	PVV70502
9a	Kit, Repair Solenoid 208V	1	ACA85332	ACA85332
9b	Coil, Solenoid Valve	1	ECO10118	ECO10118
10	Assembly, Control Cluster (Complete)	1	SPA94000	SPA94000
10a	Kit, Moisture Indicator	1	ACA85965	ACA85965
10b	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400
10c	Valve, Ball 3/8”	1	PVV50500	PVV50500
10d	Valve, Check 3/8”	1	PVV50515	PVV50515
10e	Valve, Manual Purge	1	PVV50550	PVV50550
10f	Valve, Safety 125 PSI	1	PVV50560	PVV50560
11	Shroud, Cluster Panel	1	ACP70210	ACP70210
12	Flare Fitting	1	PCB50125	PCB50125
13	Assembly, Compressor Head (Complete)	2	HGH30206	HGH30212
13a	Fan, Compressor (Clockwise)	2	HGA10315	HGA10320
13b	Shroud, Fan	2	HGA30305	HGA30300
14	Hose, Flex 12”	1	PCH50206	PCH50206
15	Guard, Fan	2	MMS70200	MMS70200
16	Tank, Purge	1	STK96004	STK96005
17	Hose, Flex 21”	1	PCH50208	PCH50208
18	Fan, 208V	1	SEA95540	SEA95540
19	Tank, Receiver	1	TST90312	TST90317
20	Switch, ON/OFF	2	ECS10417	ECS10417
21	Switch, Pressure	1	ECS10445	ECS10445
22	Feet, Rubber	4	ACA85975	ACA85975
23	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
24	Maintenance Kit	1	ACA85404	ACA85404

*** Parts Included In Maintenance Kit**

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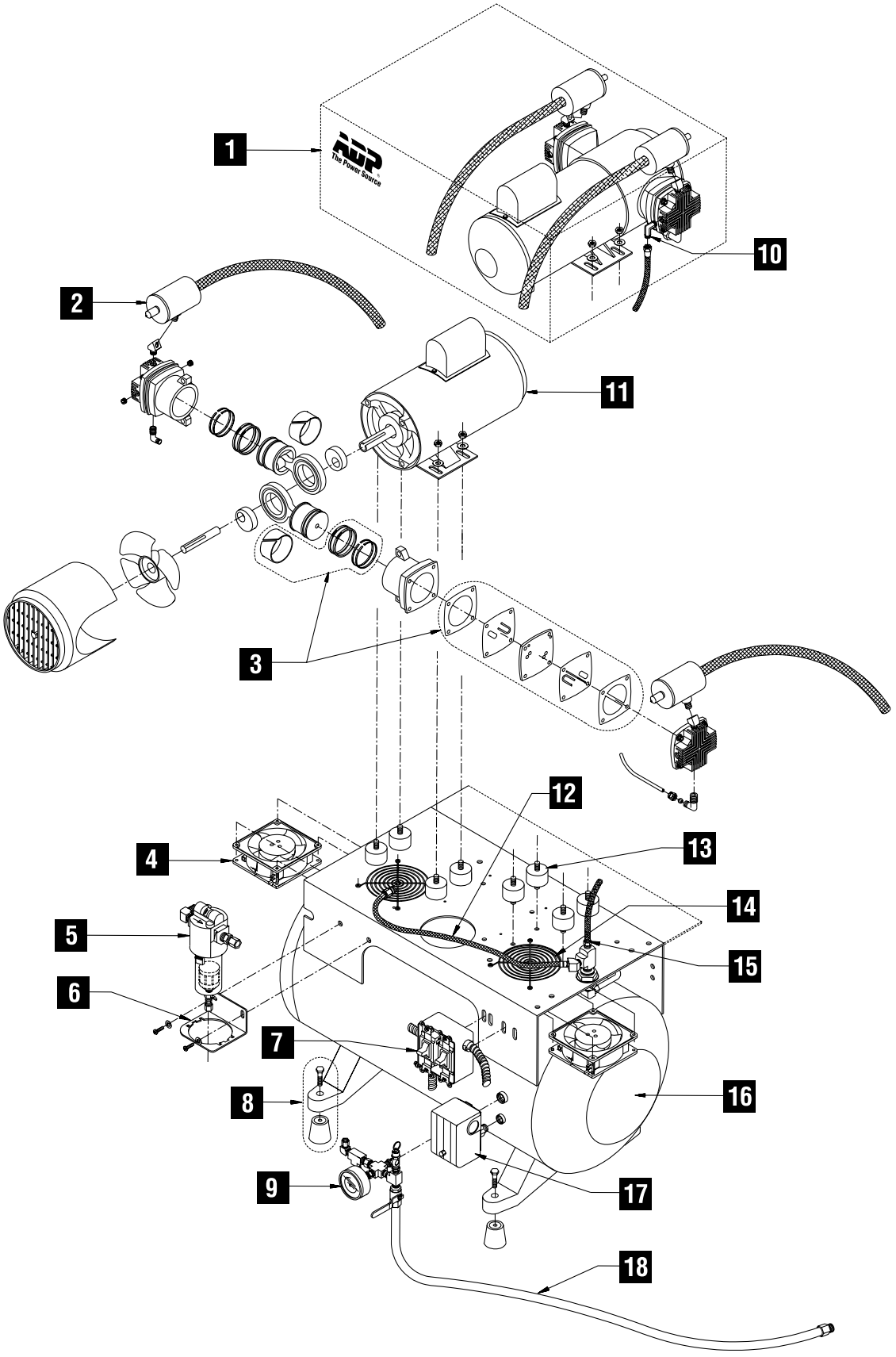
Standard Model
Twin Head / 2 Cylinder



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Standard Model
Twin Head / 2 Cylinder

Item	Description	Quantity	OT32	OT42
1	Quiet Cover (Optional)	1	ACA70710	ACA70710
2	Filter, Air Intake*	4	ACP90500	ACP90500
3	Kit, Head Repair	2	HGA85325	HGA85325
4	Fan, 208V	2	SEA95540	SEA95540
5	Assembly, Ultrair (Complete)	1	ACA85215	ACA85215
5a	Element, .01 micron*	1	ACA86055	ACA86055
5b	Assembly, Float	1	ACA85210	ACA85210
5c	Indicator, Differential Pressure	1	AAP85210	AAP85210
6	Bracket, Ultrair	1	MBS70110	MBS70110
7	Switch, ON/OFF	2	ECS10417	ECS10417
8	Feet, Rubber	4	ACA85975	ACA85975
9	Assembly, Control Cluster (Complete)	1	SPA96100	SPA96100
9a	Gauge, Air Pressure	1	PGA70400	PGA70400
9b	Valve, Check 3/8”	1	PVV50515	PVV50515
9c	Valve, Ball 3/8”	1	PVV50500	PVV50500
9d	Valve, Safety 125 PSI	1	PVV50560	PVV50560
10	Flare Fitting	1	PCB50125	PCB50125
11	Assembly, Compressor Head (Complete)	2	HGH30206	HGH30212
11a	Fan, Compressor (Clockwise)	2	HGA10315	HGA10320
11b	Shroud, Fan	2	HGA30305	HGA30300
12	Hose, Flex 21”	1	PCH50208	PCH50208
13	Mount, Motor	8	MRP70980	MRP70980
14	Guard, Fan	2	MMS70200	MMS70200
15	Hose, Flex 12”	1	PCH50206	PCH50206
16	Tank, Receiver	1	TST90312	TST90317
17	Switch, Pressure	1	ECS10455	ECS10455
18	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
19	Maintenance Kit	1	ACA85404	ACA85404

*** Parts Included In Maintenance Kit**

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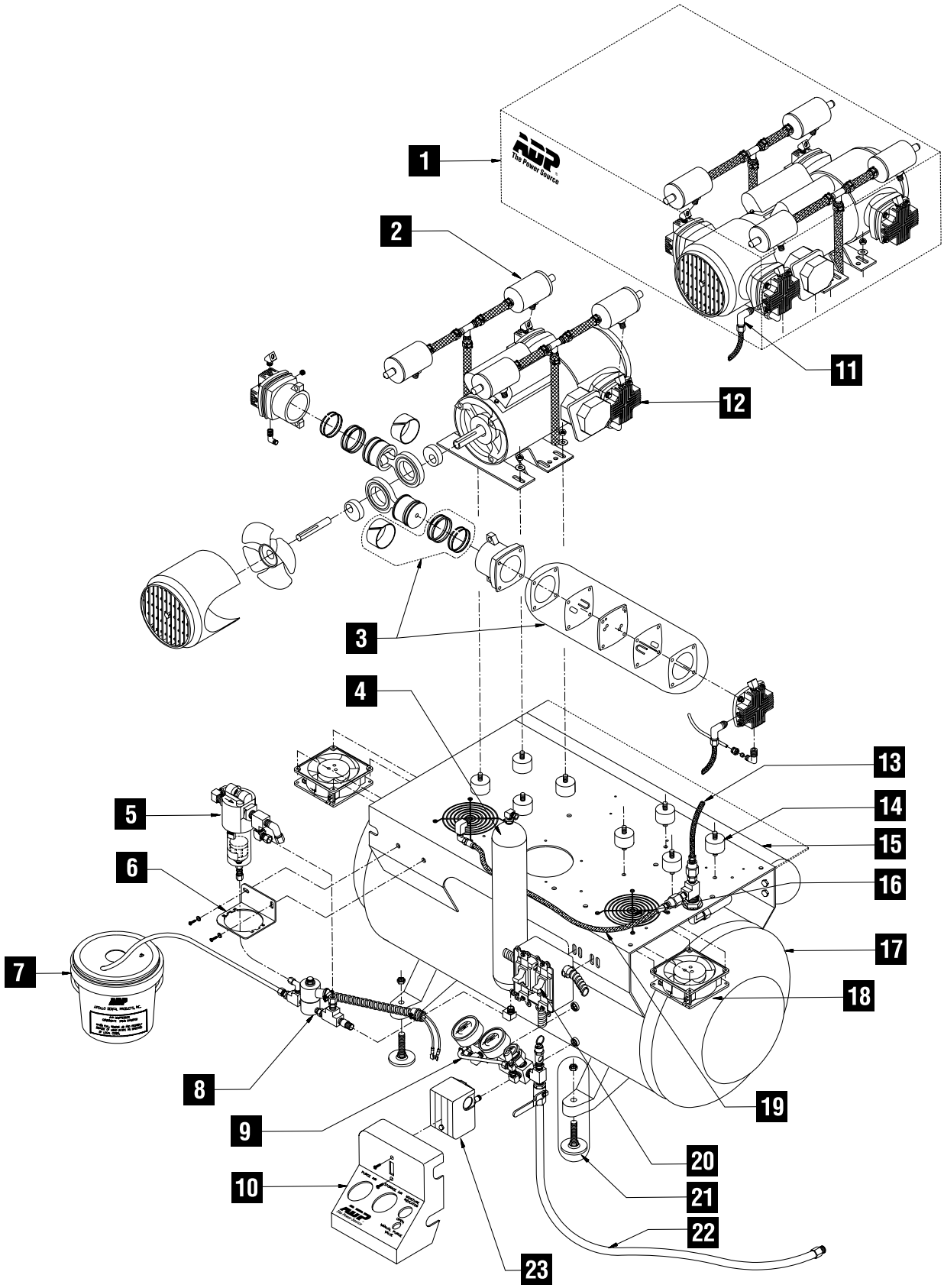
Desiccant Model
Twin Head / 4 Cylinder



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Desiccant Model
Twin Head / 4 Cylinder

Item	Description	Quantity	OT62D	OT82D
1	Quiet Cover (Optional)	1	ACA70710	ACA70715
2	Filter, Air Intake*	8	ACP90500	ACP90500
3	Kit, Head Repair	2	HGA85335	HGA85335
4	Assembly, Dryer Tank	1	ACA85307	ACA85307
4a	Kit, Desiccant	1	ACA85345	ACA85345
5	Assembly, Ultrair (Complete)	1	ACA85215	ACA85215
5a	Element, .01 micron*	1	ACA86055	ACA86055
5b	Assembly, Float	1	ACA85210	ACA85210
5c	Indicator, Differential Pressure	1	AAP85210	AAP85210
6	Bracket, Ultrair	1	MBS70110	MBS70110
7	Canister, Condensate Drain	1	SPA95400	SPA95400
8	Valve, Quick Exhaust 208V (Solenoid)	1	PVV70502	PVV70502
8a	Kit, Repair 208V (Solenoid)	1	ACA85332	ACA85332
8b	Coil, Solenoid Valve 208V	1	ECO10118	ECO10118
9	Assembly, Control Cluster (Complete)	1	SPA94001	SPA94002
9a	Kit, Moisture Indicator	1	ACA85965	ACA85965
9b	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400
9c	Valve, Ball	1	PVV50500	PVV50500
9d	Valve, Check 3/8”	1	PVV50515	PVV50515
9e	Valve, Manual Purge	1	PVV50550	PVV50550
9f	Valve, Safety 125 PSI	1	PVV50560	PVV50560
10	Shroud, Cluster Panel	1	ACP70210	ACP70210
11	Flare Fitting	1	PCB50125	PCB50125
12	Assembly, Compressor Head (Complete)	2	HGH30222	HGH30226
12a	Fan, Compressor (Counter-clockwise)	2	HGA10325	HGA10325
12b	Fan, Compressor (Clockwise)	2	HGA10320	HGA10320
12c	Shroud, Fan	4	HGA30300	HGA30300
13	Hose, Flex 12”	1	PCH50206	PCH50206
14	Mount, Motor	8	MRP70980	MRP70980
15	Tank, Purge	1	STK96006	STK96007
16	Guard, Fan	2	MMS70200	MMS70200
17	Tank, Receiver	1	TST90322	TST90322
18	Fan, 208V	2	SEA95540	SEA95540
19	Hose, Flex 21”	1	PCH50208	PCH50208
20	Switch, ON/OFF	2	ECS10417	ECS10417
21	Feet, Rubber	4	MRP70969	MRP70969
22	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
23	Switch, Pressure	1	ECS10450	ECS10455
24	Maintenance Kit	1	ACA65406	ACA65406

*** Parts Included In Maintenance Kit**

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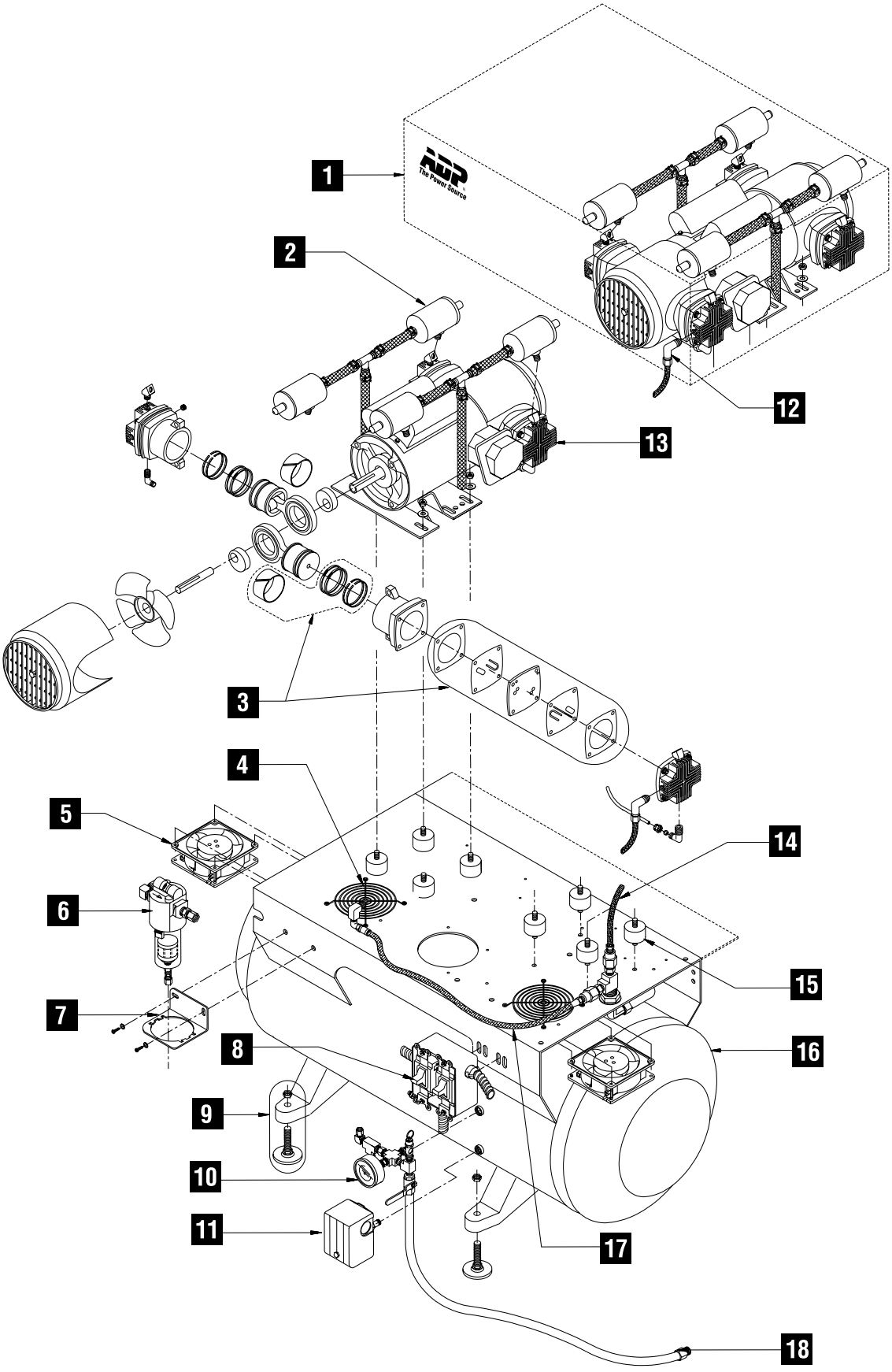
Standard Model
Twin Head / 4 Cylinder



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Standard Model
Twin Head / 4 Cylinder

Item	Description	Quantity	OT62	OT82
1	Quiet Cover (Optional)	1	ACA70710	ACA70715
2	Filter, Air Intake*	8	ACP90500	ACP90500
3	Kit, Head Repair	2	HGA85335	HGA85335
4	Guard, Fan	2	MMS70200	MMS70200
5	Fan, 208V	2	SEA95540	SEA95540
6	Assembly, Ultrair (Complete)	1	ACA85215	ACA85215
6a	Element, .01 micron*	1	ACA86055	ACA86060
6b	Assembly, Float	1	ACA85210	ACA85210
6c	Indicator, Differential Pressure	1	AAP85210	AAP85210
7	Bracket, Ultrair	1	MBS70110	MBS70110
8	Switch, ON/OFF	2	ECS10417	ECS10417
9	Feet, Neoprene	4	MRP70969	MRP70969
10	Assembly, Control Cluster (Complete)	1	SPA96100	SPA96100
10a	Gauge, Air Pressure/Purge	2	PGA70400	PGA70400
10b	Valve, Check 3/8”	1	PVV50515	PVV50515
10c	Valve, Ball 3/8”	1	PVV50500	PVV50500
10d	Valve, Safety 125 PSI	1	PVV50560	PVV50560
11	Switch, Pressure	1	ECS10450	ECS10455
12	Flare Fitting	1	PCB50125	PCB50125
13	Assembly, Compressor Head (Complete)	2	HGH30222	HGH30226
13a	Fan, Compressor (Counter-clockwise)	2	HGA10325	HGA10325
13b	Fan, Compressor (Clockwise)	2	HGA10320	HGA10320
13c	Shroud, Fan	4	HGA30300	HGA30300
14	Hose, Flex 12”	1	PCH50206	PCH50206
15	Mount, Motor	8	MRP70980	MRP70980
16	Tank, Receiver	1	TST90322	TST90322
17	Hose, Flex 21”	1	PCH50208	PCH50208
18	Hose, 5’ x 3/8”	1	ACA85955	ACA85955
19	Maintenance Kit	1	ACA85406	ACA85406

*** Parts Included In Maintenance Kit**

Trouble-Shooting Chart
Oil-Less Scroll Compressor

DOES COMPRESSOR RUN?

YES → Does compressor run for a few seconds, "chuggs", then stops?

NO → **Go to next page**

YES → Does compressor pressurize from 80 to 100 psi in less than 1 minute with no air being used?

NO → Does unloader valve (F) pressure switch (G) or float assembly (C) seat while running?

NO → Clean or replace

YES → Is intake filter (M) clogged?

YES → Replace intake filter

NO → Is there sufficient pressure build-up with head discharge line (L) removed?

NO → Defective head, contact ADP

YES → Are there leaks in compressor or in office piping system?

YES → Locate and repair

NO → Does air leak from unloader valve (F) or pressure switch (G) continuously until unit cycles again?

NO → Contact ADP

YES → Check storage check valve (D), between purge & storage gauges.

NOTE: Disconnect line from bottom of coalescing (C) bowl for proper diagnosis.

YES → Does compressor cycle with no air being used?

YES → Is manual purge valve (E) in "ON" position?

YES → Turn valve to "OFF" position

NO → Are there leaks in compressor or in office piping system?

NOTE: Close shut off valve (H). Pump up tank to 100 psi. If pressure is maintained for 15-20 min., leak is in office lines.

NO → Is the moisture indicator (I) pink?

YES → Does unloader valve system function properly?

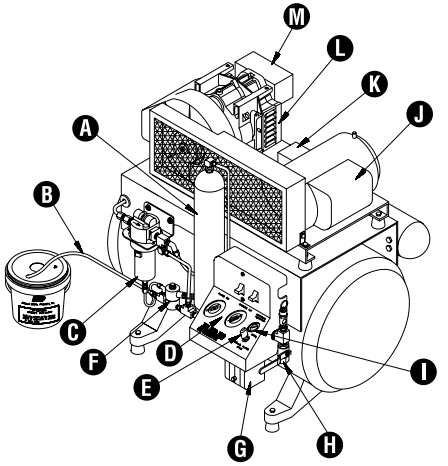
NO → **1.** Ensure that unloader valve (F), float assembly (C) & pressure switch (G) close on pump-up, & open on purge cycle. **2.** Ensure that drain line (B) is not clogged

YES → Does compressor run too hot or too frequent?

YES → **1.** Locate and repair leaks **2.** Ventilate if room is above 100 deg F. **3.** Contact ADP, compressor may be undersized.

NO → Run unit in manual purge mode for one week. If indicator still wet, replace desiccant (A).

Compressor Component Diagram



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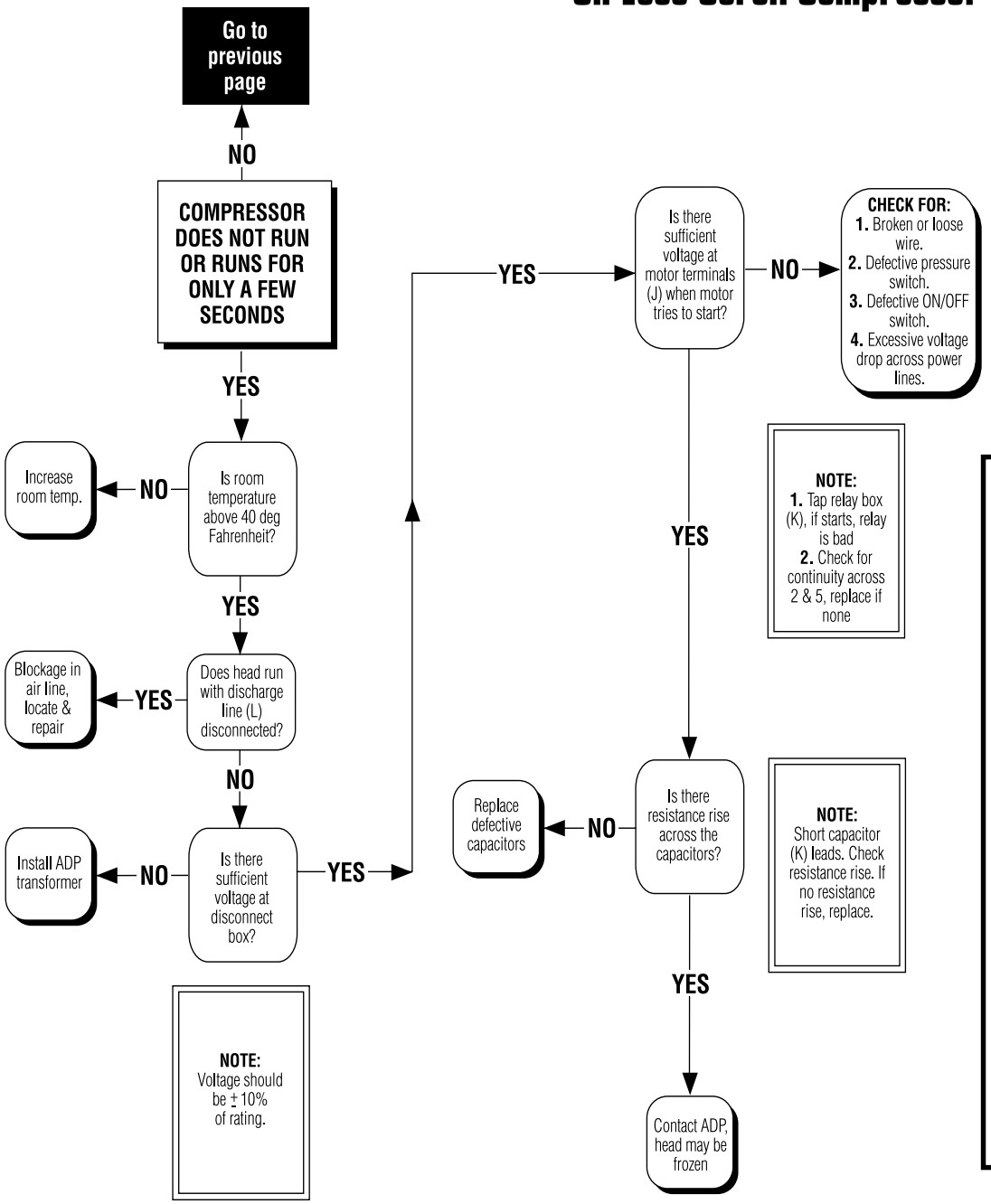
Trouble-Shooting Chart
Oil-Less Scroll Compressor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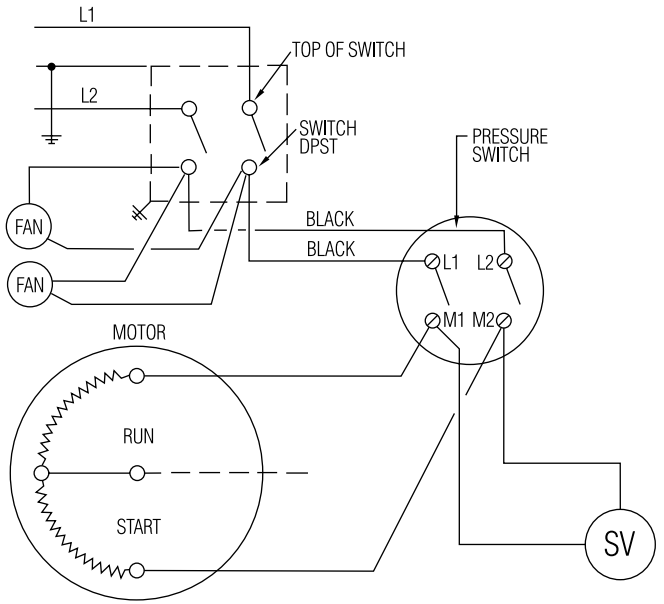
NO
COMPRESSOR DOES NOT RUN OR RUNS FOR ONLY A FEW SECONDS
YES
Is room temperature above 40 deg Fahrenheit?
NO
Increase room temp.
YES
Does head run with discharge line (L) disconnected?
YES
Blockage in air line, locate & repair
NO
Is there sufficient voltage at disconnect box?
NO
Install ADP transformer
YES
NOTE: Voltage should be ± 10% of rating.
YES
Is there sufficient voltage at motor terminals (J) when motor tries to start?
NO
CHECK FOR:
1. Broken or loose wire.
2. Defective pressure switch.
3. Defective ON/OFF switch.
4. Excessive voltage drop across power lines.
YES
NOTE:
1. Tap relay box (K), if starts, relay is bad
2. Check for continuity across 2 & 5, replace if none
Is there resistance rise across the capacitors?
NO
Replace defective capacitors
YES
NOTE: Short capacitor (K) leads. Check resistance rise. If no resistance rise, replace.
YES
Contact ADP, head may be frozen

Compressor Wiring Diagram



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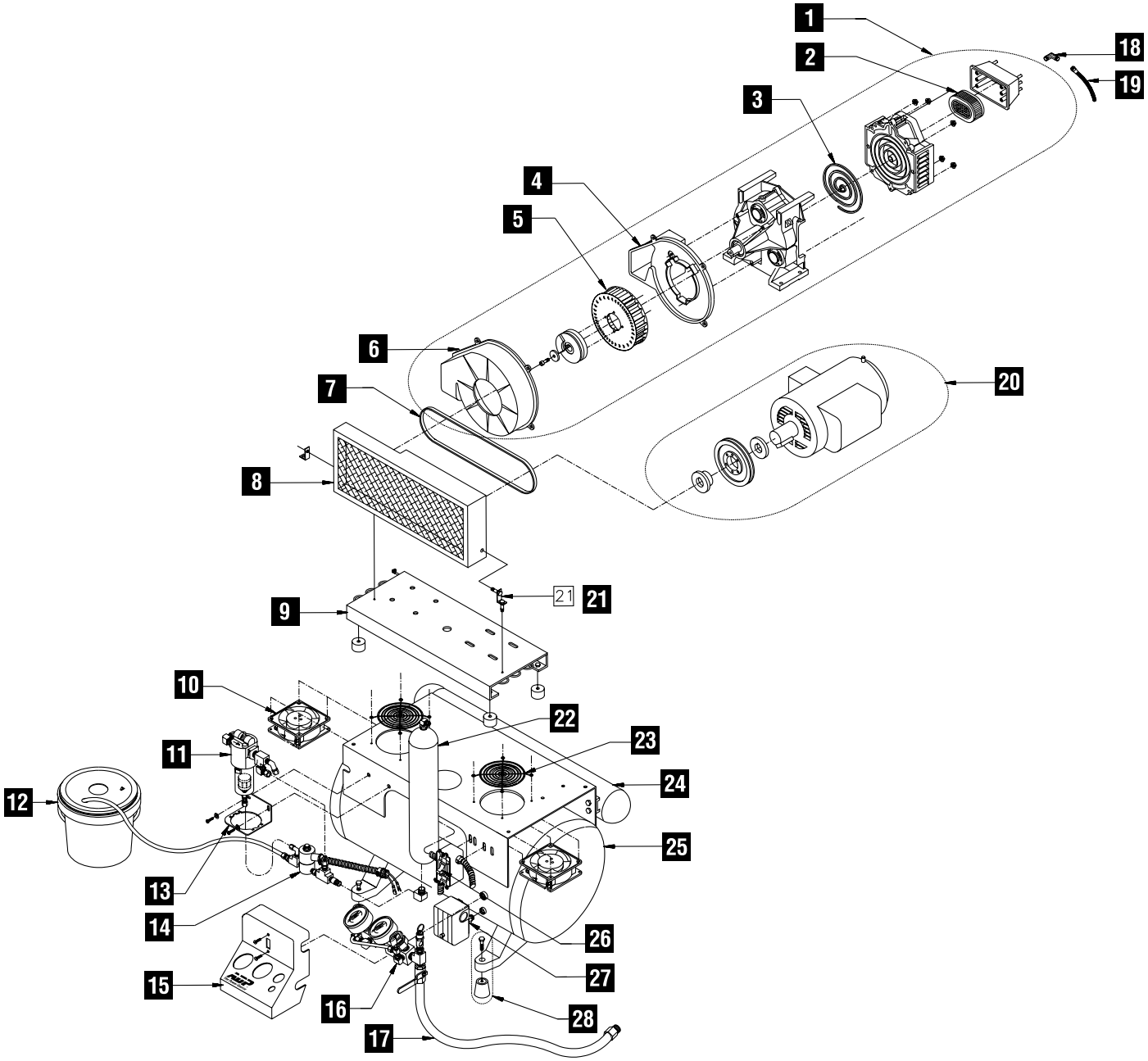
Desiccant Model
Single Head Scroll



Desiccant Model
Single Head Scroll

Item	Description	Quantity	OS52D
1	Head, 3 HP Scroll (Complete)	1	HPH30520
2	Filter, Air Intake*	1	PFM50950
3	Tip Seal Set	1	HPA30505
4	Duct, Fan	1	HPA30515
5	Fan	1	HPA30520
6	Shroud, Fan	1	HPA30510
7	Belt	1	MMS73500
8	Guard, Fan	1	MBS80655
9	Scroll MTR/Pre-cooler Platform	1	ACP92000
10	Fan, 208V	2	SEA95540
11	Assembly, Ultrair (Complete)	1	ACA85215
11a	Element, .01 Micron*	1	ACA86055
11b	Assembly, Float	1	ACA85210
11c	Indicator, Differential Pressure	1	AAP85210
12	Canister, Condensate Drain	1	SPA95400
13	Bracket, Ultrair	1	MBS70110
14	Valve, Quick Exhaust 208V (Solenoid)	1	PVV70502
14a	Kit, Repair 208V (Solenoid)	1	ACA85332
14b	Coil, Solenoid Valve 208V	1	ECO10118
15	Shroud, Cluster Panel	1	ACP70210
16	Assembly, Control Cluster (Complete)	1	SPA94000
16a	Kit, Moisture Indicator	1	ACA85965
16b	Gauge, Air Pressure/Purge	2	PGA70400
16c	Valve, Ball	1	PVV50500
16d	Valve, Check 3/8”	1	PVV50515
16e	Valve, Manual Purge	1	PVV50550
16f	Valve, Safety 125 PSI	1	PVV50560
17	Hose, 5’ x 3/8”	1	SPA95100
18	Flare Fitting	1	PCB50125
19	Hose, 12”	1	PCH50206
20	Scroll Motor w/ Pulley (Complete)	1	HPH30510
21	Bracket, 1” Angle	2	MBS70165
22	Assembly, Dryer Tank	1	ACA85308
23	Guard, Fan	2	MMS70200
24	Tank, Purge	1	STK96005
25	Tank, Receiver	1	TST90317
26	Switch, ON/OFF	1	ECS10417
27	Switch, Pressure	1	ECS10450
28	Foot, Rubber	4	ACA85975
29	Maintenance Kit (Annual)	1	ACA85415
30	10,000 Hr. Kit	1	ACA85416

*** Parts Included In Maintenance Kit**

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Glossary of Terms

Air	A mixture of gases in Earth's atmosphere used to sustain life. Note: In dental work, restorative cosmetic bonding air may be considered ULTRA-Dry if its dew point is less than minus 20 degrees Fahrenheit.
Amperage	An electrical term used to describe a unit of current, the ampere.
Barometric Pressure	The absolute atmospheric pressure existing at the surface of the Earth.
CFM	A volume flow measurement in units of cubic feet per minute.
Capacity	A measured volume flow rate used to describe air delivered at conditions of pressure, temperature and existing moisture content in units of CFM.
Check Valve	A device that permits flow in one direction only.
Compressor	A mechanical device used to deliver compressed air above atmospheric pressure (0 PSIG).
Dead-End Pressure	The suction pressure attained by a vacuum pump at zero capacity with the suction absolutely blanked off. Measured in inches of Mercury (HG).
Decibel	A measure of pressure waves used to describe sound pressure or noise level or db-A.
db-A	The decibel level measured on the "A" weighing scale at 1 meter in height and meter in distance from the sound source.
Desiccant	A medium used to extract moisture from air.
Dew Point	The temperature at which the vapor (moisture) in air will begin to condense (form dew).
Discharge Pressure	The total pressure measured at the discharge (outlet of the compressor). The pressure is commonly expressed in pounds per square inch (PSI). Note: Pressure may be expressed in gauge or absolute pressure. PSIG plus atmospheric equals PSIA.
Dryer	A device used to remove moisture from the air. Common types of air dryers include desiccant and refrigerant.
FDA	The United States Food and Drug Administration governing medical device manufacturing procedures.
Filter	A device for separating and removing dust and dirt from air or water. Note: A Coalescing filter is an ultra fine mechanical device used to remove harmful dusts, fumes, mists, smog, smoke, and aerosols from the air.

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Glossary of Terms

Free Air — Free air is defined as air at atmospheric conditions at any specific location. Because the altitude, barometer, and temperature may vary at different localities and at different times, it follows that this term does not mean air under identical or standard conditions.

Gasket — A device used to provide a seal between two mating surfaces usually made of a soft pliable material.

Grain — A unit of measure of moisture in air. One grain is equal to 1/7000 pound.

Horsepower — A unit of work (See Work). One horsepower is the amount of work required to raise 550 pounds a distance of one foot in one seconds time.

Humidity — In normal terms, humidity has to do with moisture (water vapor) in the atmosphere. Relative humidity (RH) is the ratio of the actual partial vapor pressure in an air-vapor mixture to the saturated vapor pressure at the existing dry-bulb temperature, usually expressed in percentage.

Impeller — The dynamic rotating element of the liquid ring vacuum pump which imparts energy to the flowing medium by means of centrifugal force. It consists of a number of blades mounted so as to move with the motor shaft.

Inches of Mercury — A unit of measure (In-Hg) used to describe vacuum, a pressure below atmospheric and defined as a column of mercury of a specified height having a weight proportional to its height and exerting a force to a unit area.

Inches of Water — 13.6 inches of water equals one inch of mercury (See Inches of Mercury above).

Inlet Pressure — The total pressure (static plus velocity) at the inlet of the compressor or vacuum pump. Measured in C.F.M.

KVA — An electrical term used to define transformer ratings of Kilo-Volt-Amperes (Thousands of Volt Amperes).

Liquid Piston-Ring — A rotary vacuum pump in which a veined rotor or impeller revolves in an elliptical casing, with the impeller spaces sealed by a ring of liquid (water) rotating with it inside the casing.

Micron — A unit measure of extremely small particle size, 1 micron = .0004 inches.

N.F.P.A. — National Fire Protection Association. A nonprofit membership organization dedicated to promoting safety from fire, electricity, and related hazards through research, codes and standards, technical advisory services, and public education.

NPT — Abbreviation of the term used to define pipe size of National Pipe Thread.

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Glossary of Terms

Oil	A refined petroleum product used in the cooling and lubrication of reciprocating air compressors.
Piston	The reciprocating component of the air compressor which is guided and retained in a compression cylinder.
Pressure	Pressure is a force per unit area usually expressed in psi (pounds per square inch) for compressors or In-Hg (inches of Mercury) for vacuums.
Reciprocating Compressor	A mechanical device used to compress air in which the reciprocating component is a piston having a reciprocating motion in a cylinder.
Saturation	Occurs when the vapor in air is at the dew point or saturation temperature, (See Dew Point).
Seal	A device used between rotating and stationary parts to separate, and minimize leakage between areas of unequal pressure.
Shaft	The part of the rotating element on which the rotating parts are mounted and by means of which energy is transmitted.
Storage Tank	An air tank or receiver used to store air under pressure.
SCFM	Air compressor volume flow rate measured in Cubic Feet per Minute at Standard Conditions of 14.7 PSIA and 60 degrees Fahrenheit.
Tandem Compressor	Two individual air compressors connected to a common discharge line usually wired to start-run-stop simultaneously.
Temperature	A measure of heat or cold (absence of heat) usually expressed in degrees Fahrenheit or degrees Celsius or Centigrade.
Transformer	An electrical device used to increase (boost) or decrease (buck) voltage usually rated in KVA, (See KVA).
U.L.	The Underwriters Laboratories Incorporated, an independent laboratory testing for public safety.
Vacuum	Vacuum is a type of pressure state when air pressure is below atmospheric, usually measured in In-Hg (Inches of Mercury), or In-H2O (Inches of Water).
Valve	A device that regulates the flow of air or water.
Voltage	An electrical term used to describe an electromotive force expressed in volts.
Work	Work is energy in transition (Energy equals a unit of time). Work can't be done unless there is movement.

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DENTAL SYSTEM PACKAGES

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DENTAL VACUUM PACKAGES

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